



FortiSwitch 1048D

QuickStart Guide



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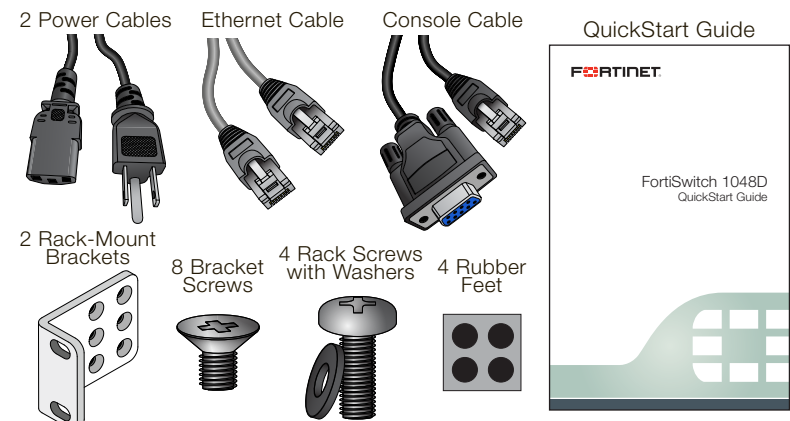
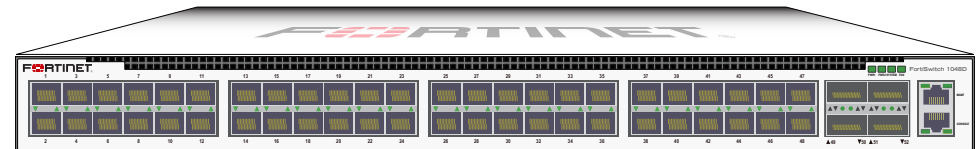
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Package Contents

Fortinet's consolidated security solutions provide an integrated set of core security and network services in a single, easy-to-manage, high-performance appliance that is capable of supporting a wide range of deployment scenarios.

Your box contains the following:

- FortiSwitch 1048D
- QuickStart Guide
- 2 Power Cables
- Ethernet Cable
- Console Cable
- 4 Rubber Feet
- 2 Rack-Mount Brackets
- 8 Bracket Screws
- 4 Rack Screws with Washers



Note: Accessories may not be exactly as shown.

Installation

The FortiSwitch unit can be placed on any flat surface, or mounted in any standard 19 inch rack unit with the provided rack-mount brackets and screws.

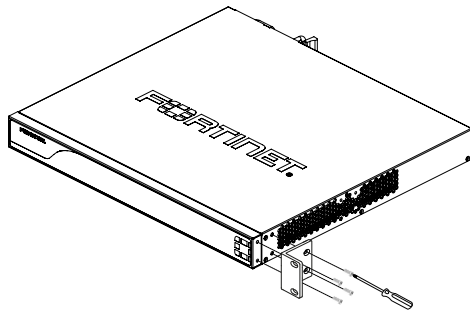
Caution: Electrostatic discharge (ESD) can damage your Fortinet equipment.

Caution: Do not place heavy objects on the unit.

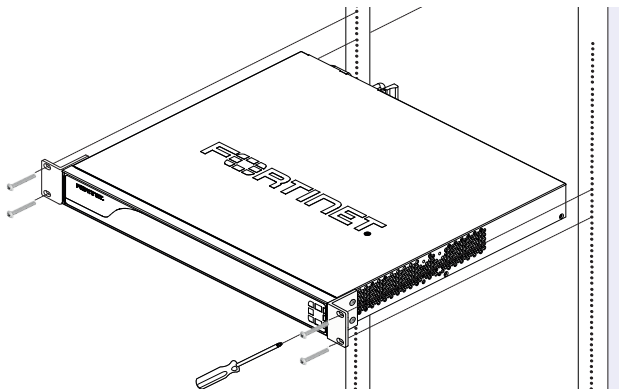
To install the FortiSwitch unit into a rack:

Caution: To avoid personal injury or damage to the unit, it is recommended that two or more people install the unit into the rack.

1. Ensure that the FortiSwitch unit is placed on a stable surface prior to rack-mount installation.
2. Attach the provided rack-mount brackets to the sides of the unit using the provided screws.



3. Position the FortiSwitch unit in the rack. Ensure there is enough room around the unit to allow for sufficient air flow.
4. Line up the rack-mount bracket holes to the holes on the rack and ensure that the FortiSwitch unit is level.

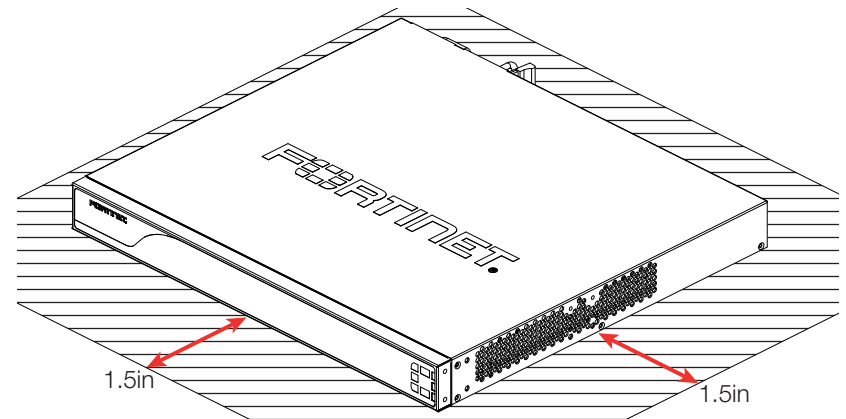


5. Finger tighten the four provided rack screws, with the washers between the screw and the rack, to attach the unit to the rack.
6. Verify that the spacing around the FortiSwitch unit conforms to requirements and that the unit is level, then tighten the rack-mount screws with an appropriate screwdriver.
7. Using the provided power cables, plug the cables into the rear of the unit and then into an electrical outlet.

Note: If the unit has a redundant power supply, each power cable should be connected to a different power source. In this way, if one power source fails, the other may still be operational and the unit will not lose power.

To install the unit on a flat surface:

1. Ensure that the surface onto which the FortiSwitch unit to be installed is clean, level, and stable and that there is at least 1.5in (3.8cm) of clearance on all sides to allow for adequate airflow.
2. Attach the provided rubber feet to the bottom of the FortiSwitch unit.
3. Place the unit in the designated location.
4. Verify that the spacing around the FortiSwitch unit conforms to requirements and that the unit is level.

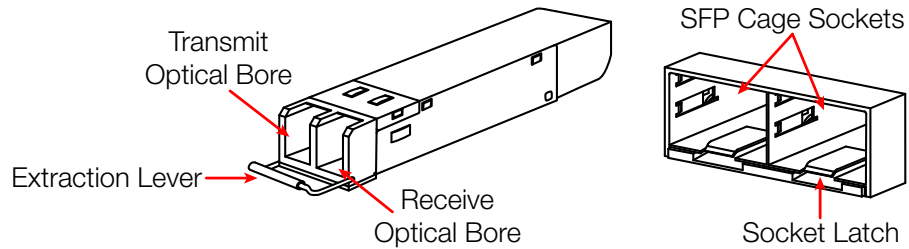


5. Using the provided power cables, plug the cables into the rear of the unit and then into an electrical outlet.

Note: If the unit has a redundant power supply, each power cable should be connected to a different power source. In this way, if one power source fails, the other may still be operational and the unit will not lose power.

Caution: Do not place heavy objects on the unit.

SFP Transceivers



Caution: SFP transceivers are static sensitive devices. Use an ESD wrist strap or similar grounding device when handling transceivers.

Caution: Do not install or remove SFP transceivers while fiber-optic cables are still attached. This can cause damage to the cables, cable connectors, and the optical interfaces. It may also prevent the transceiver from latching correctly into the socket connector.

Note: Installing and removing SFP transceivers can shorten their useful life. Do not install or remove transceivers more than is necessary.

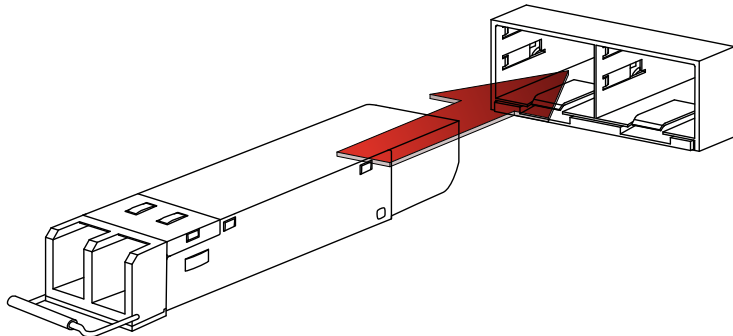
To install the SFP transceivers:

1. Ensure that you are properly grounded.
2. Remove the caps from SFP cage sockets on the front panel of the unit.
3. Position the SFP transceiver in front of the cage socket opening and ensure that the transceiver is correctly oriented.

When the transceiver is correctly oriented, the extraction lever will be level with the socket latch.

Note: SFP cage socket orientation may vary. Ensure that the SFP transceiver module is correctly oriented each time that you are inserting a transceiver.

4. Hold the sides of the SFP transceiver and slide it into the cage socket until it clicks into place.

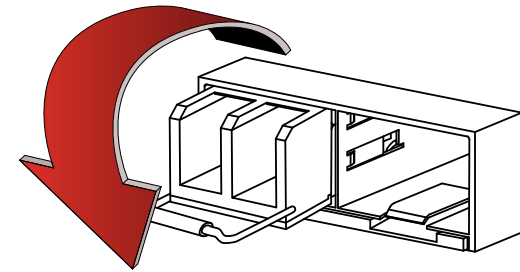


Caution: Do not force the SFP transceivers into the cage slots. If the transceiver does not easily slide in and click into place, it may not be aligned correctly or may be upside down. If this happens, remove the SFP transceiver, realign it or rotate it and slide it in again.

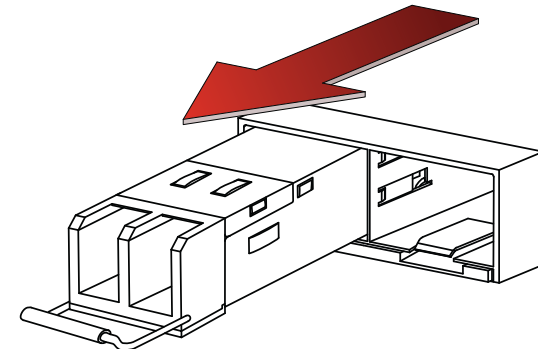
5. Press the transceiver firmly into the cage socket with your thumb.
6. Verify that the transceiver is latched correctly by grasping the sides of the transceiver and trying to pull it out without lowering the extraction lever.
If the transceiver cannot be removed, it is installed and latched correctly.
If the transceiver can be removed, reinsert it and press harder with your thumb. If necessary, repeat this process until the transceiver is securely latched into the cage socket.

To remove the SFP transceivers:

1. Ensure that you are properly grounded.
2. If applicable, disconnect the fiber-optic cable from the transceiver connector and install a clean dust plug in the transceiver's optical bores.
3. Pull the extraction lever out and down to eject the transceiver.
If you are unable to use your finger to open the lever, use a small flat-head screwdriver or other similar tool to open the lever.



4. Hold the sides of the transceiver and carefully pull it away from the cage socket.



5. Replace the cap on the SFP cage socket and place the removed SFP transceiver into an antistatic bag.

Note: Follow proper fiber-optic handling procedures when installing and removing SFP transceivers to ensure the devices remain clean and are not damaged.

Connect to the FortiSwitch Unit

The FortiSwitch unit requires some basic configuration to add it to your network. These basic steps include assigning IP addresses, subnet mask, and the default gateway.

The FortiSwitch unit can be configured using the Web-based Manager or the CLI.

This section will step you through both methods of connecting to the unit. Use whichever method you are most comfortable with.

To connect to the Web-based Manager:

1. Connect a FortiSwitch unit port to a management computer using an Ethernet cable.
2. Configure the management computer to be on the same subnet as the internal interface of the FortiSwitch unit:
 - IP address: 192.168.1.X (where X is greater than 1)
 - Subnet mask: 255.255.255.0
3. To access the FortiSwitch unit Web-based Manager, start a browser of your choice, and browse to `http://192.168.1.99`.
4. Type `admin` in the *Name* field, leave the *Password* field blank, and select *Log In*.

You are now ready to configure a new network, change passwords or change IP address to match your network settings.

5. Select *System > Management > Network Interface > IPv4 Network Configuration* and enter the required information to configure the FortiSwitch unit on your network.

You can now proceed with configuring your FortiSwitch unit.

To connect to the CLI:

1. Connect the FortiSwitch unit console port to the management computer using the provided console cable.
2. Start a terminal emulation program on the management computer. Select the COM port and use the following settings:
 - Baud Rate: 115200
 - Data bits: 8
 - Parity: None
 - Stop bits: 1
 - Flow Control: None
3. Press *Enter* on your keyboard to connect to the CLI.
4. Type `admin` in the *Name* field, leave the *Password* field blank, and press *Enter*.

You can now proceed with configuring your FortiSwitch unit.

Troubleshooting tips

Here are some tips for correcting simple problems you may have.

Make sure the Ethernet cables are securely plugged in.

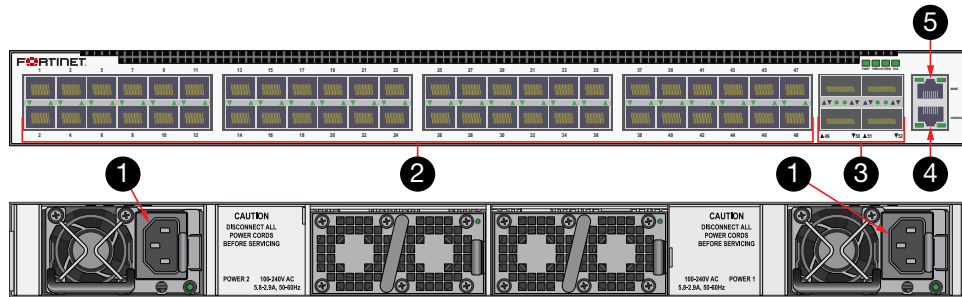
For each powered-on computer connected to the FortiSwitch with a securely plugged in Ethernet cable, the corresponding FortiSwitch LAN port status light will be lit.

Make sure the network settings of the computer are correct.

In most cases, computers should be configured to obtain an IP address automatically via DHCP.

If your network uses static IP addresses, be sure the switch and computer are configured with valid IP addresses for your network.

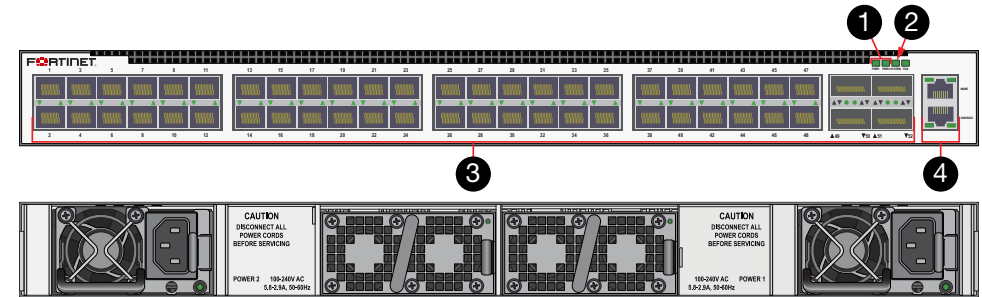
Technical Specifications



#	Interface	Type	Description
1	Power Supply		100-240V AC, 5.8-2.9A, 50-60Hz, redundant power supplies.
2	SFP Ports 1 to 48	SFP+	10Gbps/auto, small form-factor pluggable transceiver ports.
3	QSFP+ Ports 49 to 52	QSFP+	40Gbps quad small form-factor pluggable transceiver ports.
4	Console Port	RJ-45	Optional connection to the management computer. Provides access to the CLI.
5	MGMT Port	RJ-45	Gigabit Ethernet client port for management. The default IP address is 192.168.1.99.

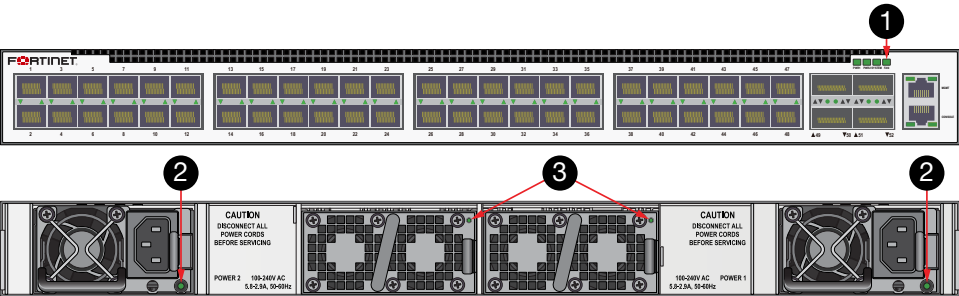
Caution: SFP ports should use UL listed Optical Transceiver products, rated Laser Class 1, 3.3V DC.

LED Specifications 1



#	LED	State	Description
1	PWR 1 & 2	Green	The power supply is powered.
		Flashing Yellow	The power supply has failed.
		Off	Power is not connected.
2	SYSTEM	Green	The unit is operating normally.
		Flashing Green	The unit is booting up or in diagnostic mode.
		Red	The unit has a major alarm.
3	SFP and QSFP Ports	Off	The unit is off.
		Green	Port is active.
		Flashing Green	Port is transmitting and receiving data.
4	Ethernet Ports Speed	Off	No link established.
		Green	Port is connected at 1Gbps.
		Yellow	Port is connected at 10/100Mbps.
4	Ethernet Ports Activity	Off	No link established.
		Flashing Green	Port is transmitting and receiving data.
		Off	Port is not in use.

LED Specifications 2



#	LED	State	Description
1	FAN	Green	Fans are operating normally.
		Yellow	A fan has failed.
2	Power Supplies	Green	The power supply is receiving power.
		Yellow	Power has been lost; a parallel power supply still has power.
		Off	The power supply has no power.
3	FAN		This LED is not in use.

Cautions and Warnings

Environmental specifications

Operating Temperature – If this device is installed in a closed or multi-unit rack assembly, the rack’s ambient temperature may be greater than the room’s ambient temperature. Make sure the rack environment is compatible with the manufacturer’s maximum rated ambient temperature (T_{ma}).

Température ambiante élevée — Si cet appareil est installé dans un cabinet fermé, la température ambiante du cabinet peut être supérieure à la température ambiante de la pièce. Assurez- vous que l’environnement dans le cabinet est compatible avec la température ambiante maximale du fabricant (T_{ma}).

Air flow – For rack installation, make sure that the amount of air flow required for safe operation of the equipment is not compromised. For free-standing installation, make sure that the appliance has at least 2 inches (5 cm) of clearance on each side to allow for adequate air flow and cooling.

Ventilation — Pour une installation dans un cabinet, assurez-vous que la ventilation nécessaire au fonctionnement de l’équipement n’est pas compromise. Pour une installation autonome, assurez-vous que l’appareil dispose d’au moins 2 pouces (5 cm) de dégagement de chaque côté pour permettre l’écoulement de l’air et un refroidissement adéquat.

Circuit overloading – To avoid overloading, use the ratings on the label. Consider the equipment’s connection to the supply circuit and the effect that circuit overloading might have on current protection and supply wiring.

For redundant power sources, connect each to an IEC/UL Listed power source whose output rating is greater than or equal to the equipment.

Surtension – Pour éviter de surcharger le circuit d’alimentation, référez-vous aux notes sur l’étiquette de l’équipement . Envisagez l’effet que la surtension du circuit pourrait avoir sur la protection de surtension et le câblage d’alimentation .

Pour les sources d’alimentation redondantes, connectez chacun à une source d’alimentation Mis CEI / UL dont la cote de rendement est supérieur ou égal à l’équipement.

Reliable earthing – Make sure all rack-mounted equipment is grounded. This includes supply connections (e .g . power strips), not only direct connections to the branch circuit.

Mise à la terre – Assurez-vous que tout l’équipement est mis à la terre . Ceci comprend les connexions d’alimentation (par exemple, les barres d’alimentation) en plus des connexions directes au circuit de dérivation.

Interference – If possible, use Shielded Twisted Pair (STP) Ethernet cables instead of Unshielded Twisted Pair (UTP) .

Interférence – Si possible, utilisez des câbles Ethernet de paire torsadée blindée (STP) plutôt que de paire torsadée non blindée (UTP).

Refer to specific Product Model Data Sheet for Environmental Specifications (Operating Temperature, Storage Temperature, Humidity, and Altitude).

Safety

Mechanical loading – To avoid personal injury or damage to the appliance, Fortinet recommends that 2 or more people together install the appliance into the rack. Balance the equipment to avoid uneven mechanical loading and tipping. Do not place heavy objects on the appliance.

Installation – Pour éviter des blessures ou des dommages à l'appareil, Fortinet recommande que deux personnes ou plus installent ensemble cet équipement dans un cabinet. L'installation du matériel à l'intérieur de la baie doit être effectuée de façon à éviter toute situation dangereuse liée à une installation non conforme. Ne placez pas d'objets lourds sur l'appareil, celui-ci n'étant pas conçu pour soutenir un poids additionnel.

Electric shock / fire — To avoid risk of damage to your equipment, personal injury, or death, disconnect cables while servicing. Do not connect or disconnect cables during lightning. Do not use this product near water for example, near a bathtub, washbowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool. Do not install this equipment in a home or public area accessible to the general population. When installed in schools, this equipment must be installed in a location where access is restricted to trained personnel.

Choc électrique / feu — Débranchez les cordons de la source d'alimentation avant tout entretien. Ne pas brancher ou débrancher les câbles lors d'un orage afin de ne subir aucun dommage corporel et éviter d'endommager votre appareil. Ne pas utiliser ce produit près de l'eau par exemple, près d'une baignoire, d'un lavabo, d'un évier de cuisine ou cuve à lessive, dans un sous-sol humide ou près d'une piscine. Le produit n'a pas vocation à être installé dans un foyer ou un lieu public pour l'ensemble de la population. Dans les écoles, ce matériel doit être installé en lieu sûr, de façon à le rendre accessible seulement aux personnels qualifiés.

Battery – Risk of explosion if the battery is replaced by an incorrect type. Do not dispose of batteries in a fire. They may explode. Dispose of used batteries according to your local regulations. IMPORTANT: Switzerland: Annex 4.10 of SR814.013 applies to batteries.

Batterie – Risque d'explosion si vous remplacez la batterie par un modèle incompatible. Jetez les piles usagées selon les réglementations locales en vigueur. IMPORTANT: Suisse: Annexe 4.10 de SR814.013 s'appliquant aux batteries.

警告

本電池如果更換不正確會有爆炸的危險

請依製造商說明書處理用過之電池

Grounding — To prevent damage to your equipment, connections that enter from outside the building should pass through a lightning / surge protector, and be properly grounded. Use an electrostatic discharge workstation (ESD) and/or wear an anti-static wrist strap while you work. In addition to the grounding terminal of the plug, on the back panel, there is another, separate terminal for earthing.

Mise à la terre — Pour éviter d'endommager votre matériel, assurez-vous que les branchements qui entrent à partir de l'extérieur du bâtiment passent par un parafoudre / parasurtenseur et sont correctement mis à la terre. Utilisez un poste de travail de décharge électrostatique (ESD) et / ou portez un bracelet anti-statique lorsque vous travaillez. Ce produit possède une borne de mise à la terre qui est prévu à l'arrière du produit, à ceci s'ajoute la mise à la terre de la prise.

Multiple power sources:

Caution: Disconnect power supply cords before servicing.

Attention: Débranchez les cordons de la source d'alimentation avant tout entretien.

Regulatory Notices

Federal Communication Commission (FCC) – USA

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received; including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

WARNING: Any changes or modifications to this product not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Industry Canada Equipment Standard for Digital Equipment (ICES) – Canada

CAN ICES-3 (A) / NMB-3 (A)

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

European Conformity (CE) - EU

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.



Product Safety Electrical Appliance & Material (PSE) – Japan

日本では電気用品安全法(PSE)の規定により、同梱している電源コードは本製品の専用電源コードとして利用し、他の製品に使用しないでください。

Voluntary Control Council for Interference (VCCI) – Japan

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。V C C I – A

Bureau of Standards Metrology and Inspection (BSMI) – Taiwan

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

The presence conditions of the restricted substance (BSMI RoHS table) are available at the link below:

<https://www.fortinet.com/bsmi>

China

此为A级产品，在生活环境中，该产品可能会造成无线电干扰。这种情况下，可能需要用户对其采取切实可行的措施

Documentation and Links

The following Fortinet web pages provide information and resources for your Fortinet product:

1. Fortinet Customer Service & Support: <https://support.fortinet.com>

On this page you can create a support account with Fortinet, register and manage your products, download updates, firmware images and release notes, and create technical support tickets.

2. Fortinet Document Library: <http://docs.fortinet.com>

This page provides the most up-to-date versions of Fortinet publications for the entire family of Fortinet products.

3. Technical Discussion Forums: <https://support.fortinet.com/forum>

This page allows you to communicate with other customers and Fortinet partners about Fortinet products, services, and configuration issues in a forum environment.

4. Training Services: <http://campus.training.fortinet.com>

This page provides course descriptions, availability, schedules, and locations of training programs in your area.

5. FortiGuard Threat Research and Response:

<http://www.fortiguard.com>

This page provides up-to-date information on vulnerabilities and threats, and includes a virus scanner, Internet Protocol (IP) signature look-up, web filtering tools, and related information.

Comments on Technical Documentation

Please send comments or information about any errors or omissions in this or any Fortinet technical documents to techdoc@fortinet.com.

Register Your Product

If you have not registered your Fortinet product, please register your product now.

Register

Register your Fortinet product in order to receive:

- Technical Support
- New product features
- Protection from new threats

Enregistrer

Vous devez enregistrer le produit pour recevoir:

- Support technique
- Nouvelles fonctionnalités du produit
- Protection contre de nouvelles menaces

Registra

La registrazione ti permette di usufruire di:

- Supporto Tecnico
- Nuove funzionalita
- Protezione dalle ultime minacce

Registrar

Debe registrar el producto para recibir:

- Apoyo técnico
- Nuevas funcionalidades del producto
- Protección contra ataques

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Email: register@fortinet.com

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